Yuba Sub-basin
Sub-basin-level Review of Proposed Projects

Sub-basin Water Requirements and Sources

The Yuba Sub-basin (see Figure 1 in the Introduction and Figure 1 at the end of this sub-basin review) encompasses approximately 156,000 acres, is located on the eastern edge of the Sacramento Valley, and is bounded by the Feather River to the west, the Bear River to the south, Honcut Creek to the north, and the Sierra foothills to the east[1]. The Yuba Sub-basin is contained within Yuba County and is bisected by the Yuba River to form the Yuba North Sub-basin and the Yuba South Sub-basin. For the entire Yuba Sub-basin, the overlying land use is predominantly agriculture and accounts for 90 percent of the non-environmental water demands within the county. Rice, pasture, and fruit and nut trees account for the greatest percentage of agricultural water demands. Flooding of rice fields in the fall for rice stubble decomposition and the creation of wintertime waterfowl habitat accounts for an additional 5 percent of the water demand within Yuba County.

Within the county, Yuba River supplies the majority of surface water. The Yuba County Water Agency (Agency or YCWA) operates the Yuba River Development Project, which includes the multi-purpose New Bullards Bar Reservoir, for member irrigation districts and several riparian divertors along the Yuba River. Groundwater is another major source of water supply within the sub-basin; groundwater pumping supplies about 30 percent of the agricultural water use.

Water Requirements/Shortages

In 1965, prior to the completion of construction of the Yuba River Development Project, the Agency entered into an agreement with the California Department of Fish and Game (CDFG) regarding in-stream flows for fishery habitat in the lower Yuba River. In 1992, the State Water Resources Control Board (SWRCB) held water rights hearings on this issue in response to complaints by several groups who believed the in-stream flows were insufficient for fishery needs. CDFG also joined in this action, seeking substantially greater in-stream flows under all hydrologic conditions. SWRCB took no action after the 1992 hearings. In 1999, SWRCB released a draft water rights decision that called for significantly greater in-stream flows and held additional hearings in early 2000 to consider new information on this issue. At these hearings, the Agency submitted as testimony its own Fishery Management Plan, which included a set of in-stream flows that were generally equivalent to the SWRCB draft in the wetter years. However, it recognized the wide variability in Yuba River hydrology, and because of differing expert opinion on fishery needs, it identified lower in-stream flows in drier years. SWRCB has since released a final decision on this matter (Decision D-1644) that calls for interim flows similar to the Agency proposed flows

[1] This differs from the Department of Water Resources Bulletin 118 definition of the Yuba Sub-basin, which includes areas within Butte County.

until the spring of 2006 when a long-term set of in-stream flow standards will be implemented. These long-term in-stream flows will require significantly greater quantities of water in the drier water years and will require the release of large quantities of water stored in New Bullards Bar Reservoir. The D-1644 long-term in-stream flows will have a significant negative impact on the available surface water supplies from the lower Yuba River for use within Yuba County. Prior to D-1644, water supply reliability was high with shortages projected for less than 3 percent of all years at a future level of development. With D-1644, future shortages are expected to average 1 in 3 years.

Proposed Projects

Table 1 summarizes all proposed short-term projects in the Yuba Sub-basin. YCWA is proposing a conjunctive management pilot project that would lead to an expanded long-term project. The pilot study is estimated to cost $1.3 million and could produce up to 15,000 acre-feet by 2003. The planned long-term conjunctive management project could provide 50,000 to 100,000 acre-feet. YCWA is also proposing a feasibility study for the YCWA Coordinated Operations Project (Project 14C/D) that would not produce water by 2003. The study would cost about $1.75 million and would determine the potential long-term water supply benefit and cost of coordinated operations.

Short-term Projects

Table 1 identifies the short-term projects proposed for the Yuba Sub-basin.

TABLE 1
Short-term Projects Proposed to Produce Water by 2003 in the Yuba Sub-basin

Project/Proponent	Project Type	Supply (acre-feet/ year)	Cost ($)	Issues
YCWA Conjunctive Use Project (Project 14A/B Short-term Pilot Project)	Conjunctive Water Management	15,000	1.3 million	Addressing local concerns, project currently funded
Brown's Valley Irrigation District (BVID) Conjunctive Use and Water Management Project (Project 3A/B Short-term Component)	Conjunctive Water Management/System Improvement	3,600 +	350,000	Local coordination, address local impacts, county concerns
Total Conjunctive Water Management		**Up to 18,600**	**1.65 million**	
YCWA Coordinated Operations Project (Project 14C/D Short-term)	Feasibility Study (no water by 2003)	N/A	1.75 million	Significant local concern; system-wide analysis required; coordination required with multiple federal, state, local agencies
Total System Improvement		**N/A**	**1.75 million**	

BVID has proposed a combined conjunctive water management/system improvement project that would produce water by 2003. The project includes the installation of up to four wells that would provide 3,600 acre-feet of groundwater for use locally, which would allow an equal amount of water to be released from Merle Collins Reservoir for use outside of the sub-basin. The second component of the BVID project consists of a pump station that would allow for delivering water diverted from the Yuba River in a low-lying canal to be pumped to a higher-elevation canal that normally receives flows only from Dry Creek and Merle Collins Reservoir. Pumping water from the lower canal to the upper canal would relieve some of the demands on releases from Merle Collins Reservoir, providing additional operational flexibility. The pump station would also allow for groundwater pumped into the lower canal (the groundwater component of the project) to be more widely distributed throughout the district by being pumped into the upper canal. The projected capital cost of this conjunctive management and system improvement project is $350,000.

Current Status of Projects

The current schedule for the YCWA Conjunctive Use Pilot Project (Project 14A/B) includes installation of wells through the winter of 2002 with an operational system by the start of irrigation season in 2002. Concurrent with the pilot project implementation, development of the Long-term Conjunctive Use Program (Project 14A/B) would take place. The first portion of program planning, development, and stakeholder/public outreach would also occur in the winter of 2002. The Yuba Coordinated Operation Project (Project 14C/D) is separated into a short-term feasibility study and the long-term project. Both the short- and long-term aspects of the Yuba Coordinated Operation Project are under plan development. The BVID Conjunctive Use/System Improvement Project (Project 3A/B) is currently in the planning stage.

Existing Funding

The YCWA Conjunctive Use Pilot Project is fully funded through a Proposition 13 grant, including partial funding for stakeholder/public outreach. Neither the YCWA Coordinated Operations Project nor the BVID Conjunctive Use/System Improvement Project has received outside funding.

Interrelationship of Projects

All YCWA projects are highly interrelated. The short-term projects are the vehicles for the development of the long-term programs. Planning, stakeholder involvement, environmental study, and documentation are some of the many development tasks that are included in the short-term projects.

The Yuba County Conjunctive Use Program (Project 14A/B) and the Yuba Coordinated Operations Project (Project 14C/D) are interrelated on several levels. Most importantly, the conjunctive use program is necessary to firm up dry-year water supply reliability within the county so that some of the storage space of New Bullards Bar Reservoir can be re-operated. Without a firm local water supply for dry years, little to no operational flexibility in the surface water supply regulation activities of the Yuba River Development Project exists in dry years. The development of groundwater would further enhance the opportunity to

benefit the State Water Project (SWP), Central Valley Project (CVP), and Bay-Delta system through re-operation.

As the BVID project (Project 3A/B) is not expected to have a significant impact on the larger Yuba North Sub-basin, groundwater effects and impacts associated with the YCWA Conjunctive Use Project are expected to be minimal.

Benefits

Implementation of the short-term projects would assist the Agency in developing the respective long-term programs. In addition, the short-term Conjunctive Use Pilot Project would provide a new water supply of up to 15,000 acre-feet by 2003. The Long-term Conjunctive Use Program would have a significant water supply benefit for in-basin water needs. By firming water supplies within the county and assuring future-year deliveries to its member districts, the Agency could potentially re-establish the flexibility in the operation of the Yuba River Development Project that would be lost when the long-term D-1644 in-stream flows go into effect. They would then be able to continue to provide water for statewide needs in drought conditions.

The Agency seeks the following benefits for entering into a coordinated operations accord for re-operation of a portion of New Bullards Bar Reservoir storage, for SWP and CVP water needs: (1) assurance that water supplies to meet the present and future needs within the Agency are fully available on a reliable basis, (2) the Agency's flood control restoration and improvement project is fully implemented, (3) the Agency is able to achieve greater certainty in regulatory requirements for the operation of its project to address in-stream beneficial uses in a balanced manner, (4) the Agency receives financial and other support in implementing projects that would enhance the fishery habitat of the lower Yuba River, (5) the Agency receives a source of revenue to help implement the Agency's water supply and flood control objectives, and (6) the value to the Agency of hydroelectric generation from the Agency's project is preserved.

Benefits to the SWP and CVP from the Coordinated Operations Project include a new water supply from the Yuba River in dry years; the potential to re-operate a portion of New Bullards Bar Storage in all water years; the ability to rely on future-year supply from the Yuba River in establishing revised operational rules for SWP and CVP facilities, such as carryover storage requirements; and the ability to potentially satisfy Bay-Delta environmental water needs with re-operated flows from the Yuba River.

Developing a groundwater supply of 3,600 acre-feet would provide water supply firming for BVID. The system improvements would allow greater overall system flexibility and full use of the newly developed groundwater for the entire district.

Implementation Challenges

Short-term Projects

For the YCWA Conjunctive Use Program, the greatest challenges would be in addressing local concerns. Because of the small-scale scope of the Conjunctive Use Pilot Project, no significant adverse implementation challenges are anticipated. The feasibility study is an

initial task required for the Coordinated Operations Project and is not expected to have any serious implementation challenges after funding. The BVID Conjunctive Use portion of this project would likely raise local concerns over the effects of groundwater pumping, including lowering the groundwater table and possible land subsidence for adjoining land owners.

Long-term Projects

Considering the long-term, the YWCA Conjunctive Use Project has a number of implementation challenges. Local involvement, member district cooperation and participation, and addressing local impacts and concerns are the main challenges. A long-term project producing up to 100,000 acre-feet would generate concerns of lowering the groundwater table and possible land subsidence. The physical challenge for the program would be in providing the necessary increased water supply reliability to ensure a firm dry-year supply at a 100-percent level of delivery to water needs throughout the county.

Implementation of the Coordinated Operations Project has a significant number of challenges. In order to meet the requisite objectives of the Agency, the cooperation and coordination of a significant number of entities would be required. As with all Agency activities, local acceptance would be needed, and local concerns would have to be addressed. As previously stated, the conjunctive use program would also have to provide the necessary additional dry-year water supply so that in-basin water needs could be met in dry years. Coordinated operations of the Yuba River Development Project would require the cooperation of the California Department of Fish and Game, U.S. Fish and Wildlife Service, and National Marine Fisheries Service to address fishery concerns. Coordinated operations with SWP and CVP facilities would require an examination of the potential range of impacts on this system including the Bay-Delta.

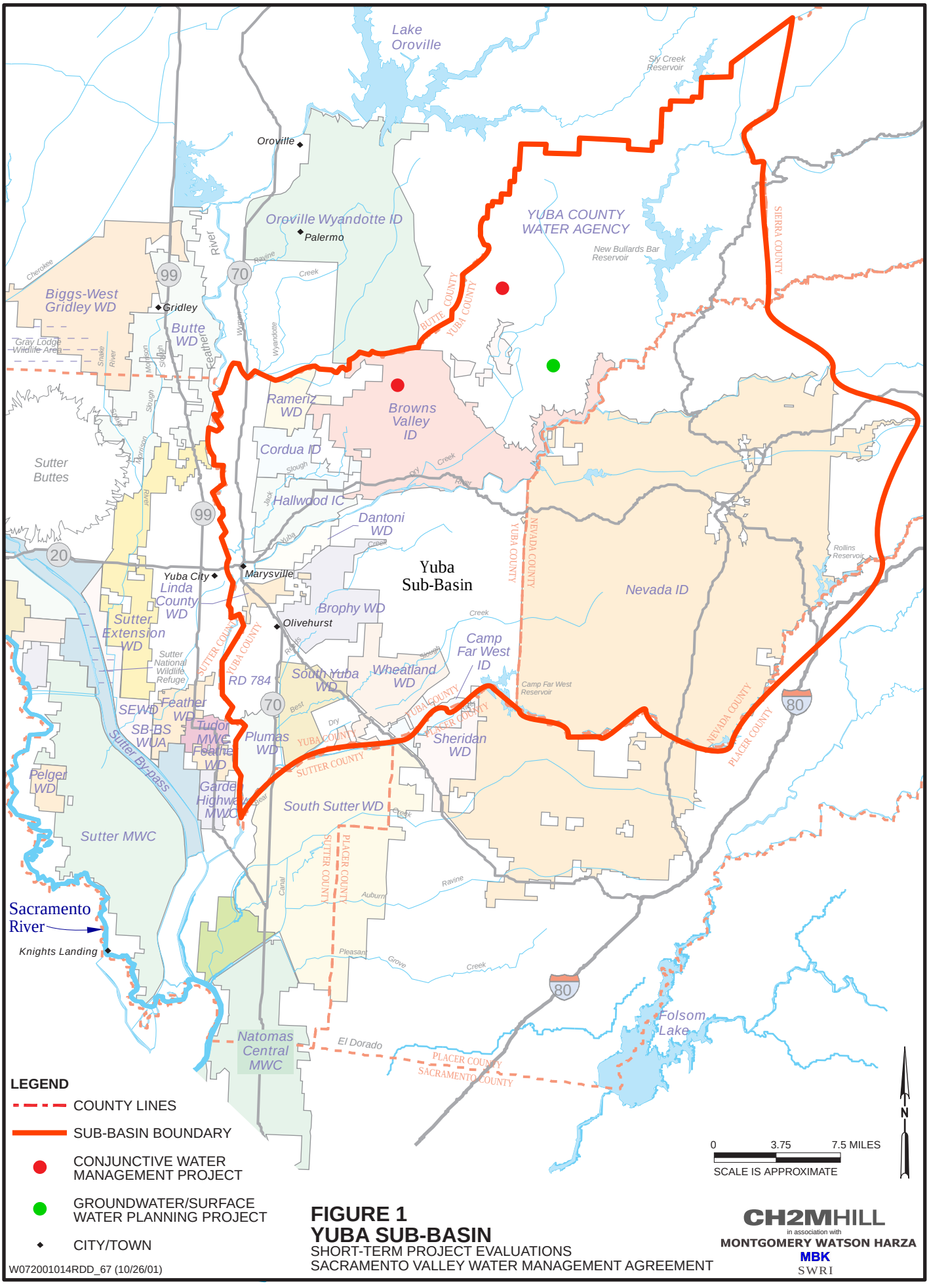

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FIGURE 1
YUBA SUB-BASIN
SHORT-TERM PROJECT EVALUATIONS
SACRAMENTO VALLEY WATER MANAGEMENT AGREEMENT

CH2MHILL
in association with
MONTGOMERY WATSON HARZA
MBK
SWRI